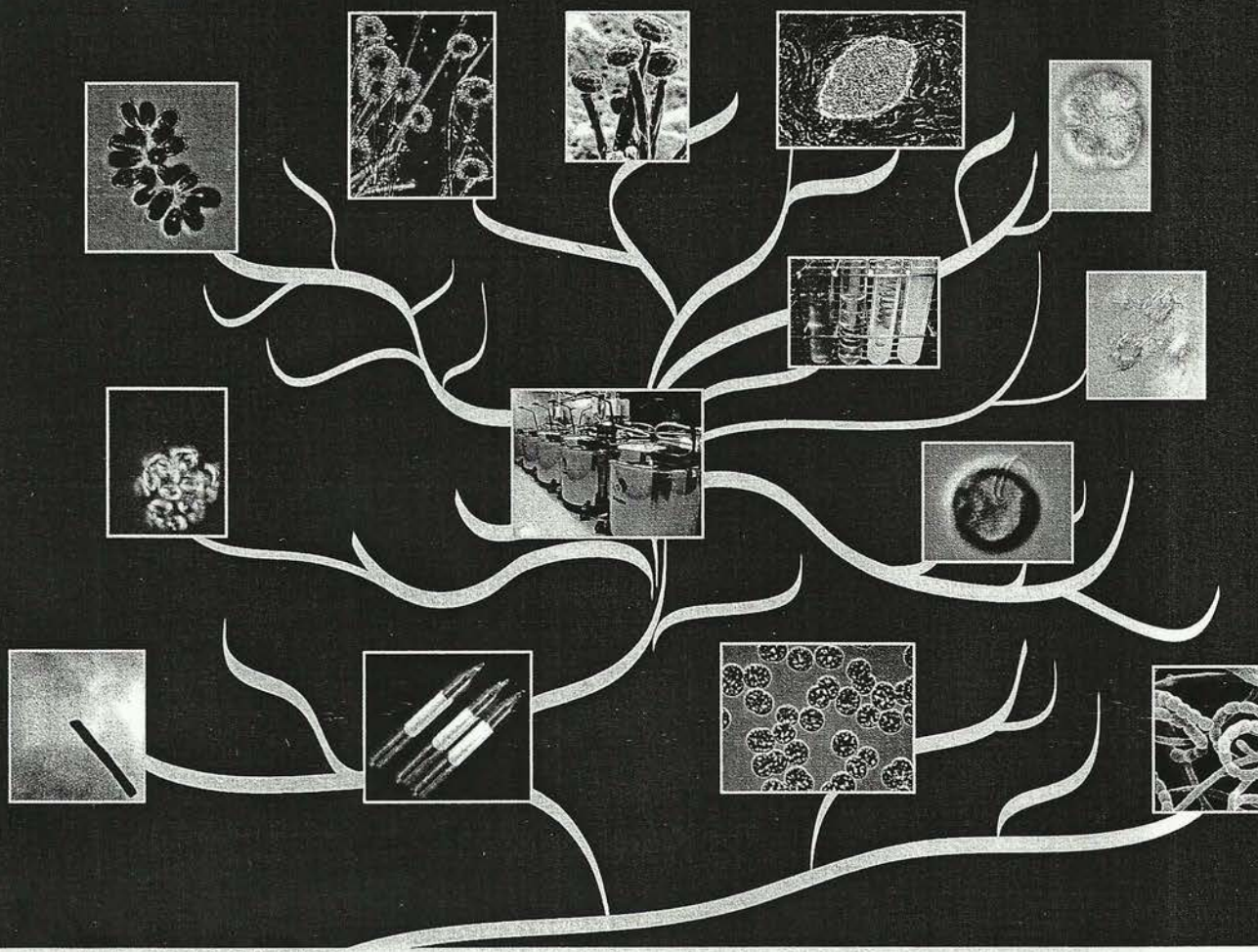
Innovative Roles of Biological Resource Centers

Edited by
Makoto M. Watanabe, Ken-ichiro Suzuki & Tatsuji Seki



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Biosynthesis, detection and toxicology of ochratoxins - optimisation of production

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Ochratoxin A (OTA) is a very well known mycotoxin found in several food commodities for which maximum limits are being discussed in EC in other to produce appropriate regulations. OTA is one of several ochratoxins produced by *Aspergillus* and *Penicillium* species. All the compounds in this group have a molecular structure very similar to OTA and some were already isolated from natural substrates. Several of these compounds such as ochratoxin , methyl and ethyl ester of ochratoxin A, 4-*R* and *S*-hydroxyochratoxin A, 10-hydroxyochratoxin A and ochratoxin A open lactone are commercially unavailable. However, they can be easily synthesized through OTA modification. With the main objective of its application on further research works, OTA production, isolation and purification has been optimised from an *A. alliaceus* strain grown on wheat medium. Synthesis and purification of some OTA derivatives has been achieved and an HPLC method for their detection was optimised. Data about their production by several species of *Aspergillus* will be presented. The toxicological properties of

ochratoxins are still not very clear and a future EC safety limit for OTA will depend on e.g., a better clarification of its carcinogenity. Could OTA derivatives play a role here?